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ABSTRACT

This document provides a written account of a testimony of Al Koeppe, on behalf of the New Jersey Commission on Higher Education, to the New Jersey Board of Public Utilities. He describes the Commission on Higher Education and its role in the state as coordinating higher education within the state, planning, policy development, and advocacy. He then elaborates on the system of higher education in New Jersey. In the area of telecommunication services, he explains that information technology is increasingly critical to education at all levels of the system and that the state's overall well being depend on higher education system's ability to access various forms of technology. He continues to explain how the state has previously recognized the significance of telecommunications for higher education, despite a lack of financial support. He then stresses the need for universal service across the entire educational system and possible ways both K-12 and higher education institutions would benefit. He concludes with specific recommendations to the Board of Public Utilities. The Board is urged to adopt a statewide universal service fund with a separate component to provide discounted rates to higher education institutions for telecommunication services and the necessary connections to access services. An estimate of the proposal costs is included. (JJL)

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ED 460 751

New Jersey Commission on Higher Education

September 1997

Testimony before the New Jersey Board of Public Utilities
on behalf of the
New Jersey Commission on Higher Education regarding Universal Service

Please state your name and who you represent.
My name is Al Koeppe, and I am pleased to be here today on behalf of the New Jersey Commission on Higher Education, of which I have been a member since its establishment in 1994.

Describe the Commission on Higher Education and its role in the state.
The Commission on Higher Education was established in 1994 by the Higher Education Restructuring Act. Under New Jersey's tripartite higher education governance structure, the Commission has statewide responsibility for higher education coordination, planning, policy development, and advocacy. Our statutory mandates include the development and implementation of a long-range plan for higher education, which was adopted last fall.

College and university governing boards are responsible for institutional governance and management as well as furthering statewide goals, and the New Jersey Presidents' Council, which includes the heads of the state's public and independent institutions, is responsible for program review and advises the Commission, Governor, and Legislature on higher education budget and policy issues.

The Commission is an 18-member body that includes eight public members, six trustee representatives, the chair of the Presidents' Council, two non-voting student representatives, and the executive director of the Commission, who is also non-voting. (A list of Commission members is included as Exhibit 1.)

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Please briefly describe the system of higher education in New Jersey.
New Jersey's higher education system is comprised of 56 degree-granting institutions: 3 public research universities, 9 state colleges and universities, 19 two-year community colleges, 14 four-year independent colleges and universities with a public mission that receive direct state aid, 3 proprietary institutions, and 8 institutions with a religious or theological mission. (Maps including the names and locations of all 56 institutions, grouped by sectors, are included as Exhibit 2.) Together, they offer over 2,600 degree programs ranging from the associate level to doctoral and professional degrees. The 45 not-for-profit institutions with a public mission serve 273,486 credit-seeking undergraduate students, 93 percent of whom are New Jersey residents. An additional 46,290 students are enrolled in graduate programs at these institutions.

The total annual budget for higher education in New Jersey is over $3.5 billion. The state provides approximately $1.4 billion and the remainder is covered by tuition and fees, county and federal governments, grants and contracts, private gifts, institutional endowments, and other sources.

Is the system of higher education relevant to this state's interests?
Yes. New Jersey's system of public and independent institutions is one of the state's most important economic, intellectual, and cultural resources. The availability of a trained workforce and the cutting edge research and technical assistance to businesses provided by our higher education institutions attract industry and help it grow and prosper. The myriad educational opportunities afforded to citizens young and old prepare individuals for challenging careers, economic independence, responsible citizenship, and personal fulfillment. By strengthening the economy and educating future leaders, our higher education system improves the quality of life for all New Jerseyans.

Are telecommunications services for higher education important to New Jersey?
Yes. Information technology is increasingly critical to education at all levels of the system. From the elementary and secondary grades to college-level studies to advanced scientific research, multimedia networking through voice, video, and data transmission is changing the nature of teaching, learning and research. The use of telecommunications in distance learning, student and faculty research, job training, and business/higher education partnerships is increasingly important to the state. Given the critical role colleges and universities play in economic development, the private sector and the state's overall well-being depend upon the higher education system's ability to access this important technology.

Has New Jersey previously recognized the significance of telecommunications for higher education?

Yes. The state's recently adopted long-range plan for higher education stresses the importance of the effective use of technology in higher education to serve the needs of New Jersey and its citizens. A Higher Education Technology Task Force appointed by the Commission on Higher Education to address technology issues raised in the plan proposed a vision for technology in higher education which states, in part, that:

> The introduction and broader use of telecommunications and networking technologies in higher education will greatly enhance teaching and learning across the state, while recognizing the changing relationship between instructor, learner, researcher, and location. It will facilitate the growth of each institution, within its unique mission, to develop the higher education enterprise in a manner consistent with the evolving needs of the state. Technology will help New Jersey students and institutions realize their full potential, while fulfilling the role of leadership expected of a state that is highly technology-dependent.

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The Commission is scheduled to adopt this vision and the task force's recommendations when we meet on September 26.

The State of New Jersey recognized the need for a renewed commitment to higher education technology in 1993, investing $100 million in an Equipment Leasing Fund that provided funding for instructional, computing, communication, and research equipment. The state recently established a Higher Education Technology Infrastructure Fund, earmarking $55 million, which will be matched by institutional funds, to assist in addressing critical connectivity needs within and among institutions and with elementary and secondary schools and libraries in order to improve access to information, educational services, and workforce training.

These funds are important steps in addressing New Jersey's higher education technology needs. They open the door to :

improved efficiency and effectiveness in teaching and research
increased access to higher education through distance learning
enhanced communication and collaboration between higher education institutions and K-12 schools
access to an external universe of libraries, information resources, and data bases
cost efficiencies realized through closer interinstitutional cooperation, consortial relationships, and resource sharing arrangements
partnerships with government and the private sector

Is the existing financial support for telecommunications in higher education sufficient?
No, not by any measure. While existing state funds indicate a recognition of the need for expanded technology in higher education, the needs across the state are great, and other sources of funding or discounted services are essential in order to assist our colleges and universities in obtaining the necessary infrastructure and telecommuni-cations services on which technology is so dependent.

The Commission on Higher Education believes that it is logical and appropriate to extend the basic federal concept of universal service beyond grades K-12 to include New Jersey's entire education system. The benefits of educational technology do not end after high school graduation. The advantages of teaching and learning fostered by educational technology in the elementary and
G1 secondary grades must continue into the postsecondary years. In fact, the natural progression from high school to college demands a continually more sophisticated use of technology and telecommunications tools.

We strongly support the state-centered approach to universal service advanced by the Ratepayer Advocate in their original brief relevant to this docket as follows:

> New Jersey should not depend on or acquiesce to any particular program of universal service support that may be established in Washington. Instead, New Jersey should first develop its own program for universal service, based on the goals and needs that are specific to our State. Second, New Jersey should evaluate the extent to which the federal program, as ultimately funded and operated, contributes to the advancement of our goals. Third, New Jersey should then adjust the funding and other requirements of its state-specific fund or funds...

and

> The Recommended Decision issued by the Federal/State Joint Board offers many meaningful measures to be used in meeting the goals outlined under the 1996 Act for the provision of universal service. But the broad scope of these goals do not lend themselves readily to fit the individual circumstances of each state, thus leaving the states with primary responsibility for ensuring that the promises of universal service will be realized for all of its respective citizens. In order to truly ensure that the residents of New Jersey receive the benefits of universal service, the Ratepayer Advocate recommends that the Board adopt a New Jersey-specific Universal Service Fund in order to assure that the needs and goals of this State are met, irrespective of developments in Washington.

In establishing such a state-specific fund, New Jersey has the opportunity to go beyond the provisions of the Federal Communications Commission (FCC) and foster systemic improvement by addressing the technology needs of its entire educational system, from preschool through lifelong learning. A New Jersey fund for universal service that provides discounts to higher education similar to those established by the FCC for schools and libraries is particularly critical because our state's service- and technology-based economy and our overall quality of life are heavily dependent upon a strong higher education system. Without affordable access to telecommunications services, our colleges and universities will be unable to take full advantage of the new technologies that promise to both expand access and improve education at all levels; they will be unable to build upon the skills and knowledge developed in the K-12 years in order to prepare citizens and the workforce for a global, technological society.

Affordable access to telecommunications service is also essential to achieving higher education's broader economic development mission. New Jersey higher education institutions conduct applied research with important industrial applications and provide technology transfer to critical state industries. They also conduct myriad job training programs and provide technical assistance to small and developing businesses. Expanded telecommunications services are essential to these activities, and to the state's continued economic well-being.

Higher education's use of telecommunications services has a broad statewide impact. In addition to

allowing significant interaction with K-12 schools, the use of technology and sophisticated telecommunications tools by colleges and universities directly benefits the general public as well as business and industry. For example:

1. Telecommunications services support electronic access to college and university libraries. The Internet and other telecommunications tools will not only allow New Jersey's college and university libraries to share resources with each other but will eventually enable the creation of a statewide library system that connects public and academic libraries electronically, tremendously increasing public access to the collections and databases available at college and university libraries. Government, business, students, and individual citizens should have access to these vast resources quickly and easily.

2. Advanced telecommunications services are integral to the success of corporate incubators at higher education institutions. By providing rent-subsidized space and other amenities for new businesses, New Jersey colleges and universities offer fledgling enterprises access to new developments in technology as well as faculty expertise in business, technology, and other key areas. When these incubators help to launch or retain a growing business, the state and its citizens benefit from job growth and an overall stronger economy.

3. The planned development of Internet 2, a new network that will carry data among universities 100 times more quickly than today's Internet, will have tremendous implications for university and private sector research. While it is impossible to conceive of all the applications such a network will spawn, it is initially expected to allow scientists from around the world to work together in "real time" toward the development of new drugs and other scientific discoveries. Internet 2 will also vastly improve distance learning by allowing for more sophisticated multimedia applications. Just as the current Internet started in the 1980s as an academic and government research network and quickly spread to include industry and the general public, Internet 2 is intended to accelerate the transfer of new technologies into the commercial sector as well as the broader educational community, including K-12 schools and libraries.

Please explain why the need for universal service spans the entire educational system.
New Jersey's K-12 and higher education systems are distinct, yet interdependent entities that share responsibility for preparing students for lifelong education, meaningful and rewarding careers, and

responsible citizenship. Telecommunications services are increasingly critical in meeting that responsibility and have the potential to provide new and better links between the two systems, ensuring coherence and continuity in policy and practice.

Educational technology should play a pivotal role in implementing new curriculum standards, teaching methodologies, and assessment tools. The funds provided for telecommunications services discounts for K-12 schools and libraries through the Federal Communications Commission's decision on universal services and a state fund, if approved by the New Jersey BPU, will enable schools to make giant strides in providing more equitable educational opportunities and improving student performance overall.

However, the need for universal service in education is not limited to K-12 schools and public libraries. The provision of affordable telecommunications services for higher education is essential to lessen the large gap between New Jersey's "haves and the have nots" and to fulfill the promise of access for students across the economic and educational spectrums.

Universal service is also necessary to link all of New Jersey's education institutions through video, voice, and data networks. For example, distance learning technology can enable students to pursue college-level work and credit while still in high school. This not only provides an important educational challenge to well-prepared students, it also shortens the time needed to earn a degree, a benefit to the state as well as the students. Video, voice, and data networks also facilitate ongoing communication between educational entities and will ultimately ensure a seamless education system from preschool to graduate school.

How would the entire education system benefit?

Changes in curriculum, assessment, and teaching modalities in the elementary and secondary grades must affect higher education policy and pedagogy. Students accustomed to using computers in their classrooms from an early age will expect access to an even more advanced level of technology at the college level. These technologically advanced students will not be content to listen passively to faculty lectures. They will want and need to be active learners, using technology to seek out information at their own pace.

Our colleges and universities must be equipped to meet those needs. It is a mistake to dedicate

extensive resources for educational technology in the elementary and secondary grades and then allow the level of access to drop off when a student enters college.

Similarly, to ensure coherence throughout the system, higher education institutions that train K-12 teachers must fully incorporate educational technology into their preparation and professional development programs so that current and future teachers are trained in the effective use and application of information technologies.

Incorporating telecommunications technologies will facilitate a regular sharing of information and learning between the higher education and K-12 communities. It will put classroom teachers in touch with the latest research on education and their subject areas, and will enable college students and faculty to interact with their K-12 counterparts.

New Jersey has several excellent examples of how technology can link K-12 and higher education to enhance education reform. The New Jersey Statewide Systemic Initiative (NJ SSI), sponsored partially by the National Science Foundation, is an excellent example of how technology is enabling higher education institutions, K-12 schools, business and industry, and other entities to work together to strengthen mathematics, science, and technology education for all students in New Jersey. Among its many initiatives, the NJ SSI is training K-12 teachers to use computers and telecommunications networking as tools to transform teaching, thinking, and learning.

The New Jersey Networking Infrastructure in Education project,which promotes the meaningful use of the Internet in science, mathematics, and technology education in more than 500 schools statewide, is also supported in part by the National Science Foundation. The project links colleges and universities, K-12 schools, and corporate partners such as Bell Atlantic to provide teacher professional development programs, technical support and administrative counsel for Internet connectivity, and video and web-based curriculum support materials and training programs. Over 2,100 educators have been trained since the project was launched in 1994. Discounted telecommuni-cations services for higher education would enhance opportunities of this sort.

What are your specific recommendations to the Board of Public Utilities?
The New Jersey Commission on Higher Education strongly urges the Board of Public Utilities to provide discounted telecommunications services for higher education institutions to ensure affordable

and universally available access across the educational spectrum. Recognizing the importance of telecommunications services in higher education as well as in elementary and secondary schools and libraries will further the statewide goals for equal access to lifelong education, workforce training, and development of a strong economy.

We respectfully submit the following recommendation for the Board's consideration:

The Board is urged to adopt a statewide universal service fund with a separate component to provide discounted rates to higher education institutions for telecommunications services and the necessary connections to access services.

Consistent with the Ratepayer Advocate's recommendation that the Board should adopt a universal service fund that addresses the specific needs of New Jersey and its citizens, the Commission on Higher Education recommends creating such a fund with a distinct component for higher education telecommunications services discounts. Such discounts are essential to extend the basic federal concept of universal service beyond grades K-12 to include the state's entire education system, thereby providing equitable access to telecommunications in higher education and bridging the opportunity gap between income levels.

New Jersey's 45 not-for-profit public and independent colleges and universities with a public mission should receive discounts on the purchase of all commercially available telecommunications services, as defined by the Federal Communications Commission for K-12 schools and libraries to include all transmission services, Internet access, and inside connections necessary to access the services (such as wiring, routers, hubs, network file servers, etc.). The Commission recommends that a discount structure for higher education institutions be based on the percent of full-time students who receive a state Tuition Aid Grant and the percent of New Jersey residents attending the institution, with a maximum discount of 30 percent. This structure recognizes the need to provide greater discounts to institutions based on the degree that they serve state residents and low-income students. A recommended formula to determine discount rates for the institutions and the resulting rate for each institution is included as Exhibit 3.

The Commission believes that the discount structure described above is the most appropriate means to extend to higher education institutions the universal service concept adopted by the federal

government for K-12 schools and libraries. However, if discounts such as those described above are not established, at the very least a higher education component of a statewide universal service fund should support network advantages and discounts for all telecommunications transmission services for higher education institutions such as those provided to K-12 schools in the State through Opportunity New Jersey. (Exhibit 4 provides the schedule of discounts provided through Opportunity New Jersey to schools and libraries; similar discounts should be extended to all transmission services.)

The Commission further recommends that the Board require all parties to meet and recommend, for Board approval, a neutral third party to administer the higher education component of a statewide universal service fund. Further, consistent with the Ratepayer Advocate's recommendation, the Board should review the results of the universal service fund in achieving its objectives after two or three years. As the higher education technology infrastructure is established over the next few years, it is important that an assessment of the effects of the fund be undertaken to ensure that all colleges and universities in the state who draw from the fund are accountable and are equipped to utilize telecommunications technology effectively and efficiently to meet statewide goals.

How much do you estimate that this proposal will cost?

The Commission estimates that an initial fund capped at $20 million in each of the first three years will cover annual discounts based on the proposed discount structure in Exhibit 3. This estimation is based on a projected average discount rate of 21 percent on telecommunications transmission services and internal wiring and connections. Once internal wiring and connections necessary to access services are largely completed over the next three years, the size of the fund can decrease substantially, supporting primarily discounts on transmission services and Internet access, as well as some wiring and connection upgrades. Currently, costs for transmission service and Internet access alone are estimated at $35 million annually; those costs will increase as enhanced connections and services are established. In addition, institutions will require upgraded wiring and connections at different points through the years. Therefore, the Commission estimates that a fund capped at $10 million will be sufficient to provide the proposed discounts once the one-time internal wiring and connections are completed.

In summary, why is it necessary that the Board adopt your recommendation for a statewide universal service fund with a component for higher education?

While the Commission on Higher Education supports the ongoing efforts at both the state and federal levels to provide discounts on telecommunications services to K-12 schools and libraries, we strongly believe that New Jersey's entire educational system -- including its not-for-profit public and independent higher education institutions -- should be eligible for discounts. Higher education and K-12 are interconnected in many ways; a common level of access to telecommunications will foster greater collaboration and cohesion throughout the system. In addition, our colleges and universities serve critical statewide needs such as economic development, scientific research, and job training that are heavily dependent upon technology and telecommunications. Higher education's telecommunications needs are of such statewide importance that New Jersey cannot afford a haphazard approach that allows some institutions to fall behind technologically; nor should it pass the full cost of educational telecommunications on to students and parents, threatening higher education access and affordability. Therefore, the Board should ensure that colleges and universities will receive reasonable discounts on telecommunications services as they address the needs of students, citizens, and the State of New Jersey.